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GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENT
LANSING



February 14, 2011

Mr. James Hahnenberg, Remedial Project Manager
United States Environmental Protection Agency
Region 5
77 West Jackson Boulevard (SR-6J)
Chicago, Illinois 60604-3507

US EPA RECORDS CENTER REGION 5



501103

Dear Mr. Hahnenberg:

SUBJECT: North Bronson Industrial Area Superfund Site

The Michigan Department of Natural Resources and Environment (DNRE) has concluded its review of the North Bronson Industrial Area (NBIA), Operable Unit 1, Sediment and Soil Sampling Study Report and the Groundwater Delineation Report, prepared by O'Brien & Gere and submitted on behalf of the Potentially Responsible Party Group (PRPs).

The PRPs performed soil and sediment sampling at the NBIA Superfund Site and submitted a report of their findings in August 2010. The PRPs sampled sediments to verify the background concentrations stipulated in the Record of Decision (ROD). Soil sampling was conducted to ascertain the scope of cleanup needed for erodible and non-erodible soils. The PRPs are proposing changes to some of the cleanup goals in the ROD and have proposed cleanup goals for soils located north of County Drain 30 as well as cleanup goals for erodible soil. The DNRE has reviewed the report and evaluated the proposals relative to Part 201, Environmental Remediation, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Part 201), and the associated administrative rules. Following are the DNRE's media-specific comments on the report and proposals.

Sediments

The PRPs are proposing changes to sediment cleanup goals stipulated in the ROD. The ROD's cleanup goals for three contaminants of concern (COCs) in sediments were based on the estimated background concentration in sediments not impacted, or only slightly impacted by site activities. These included barium, manganese, and vanadium. Cleanup goals in the ROD for these three COCs were based on the results of only one sediment sample that was considered reasonably non-impacted by site discharges. The PRPs are instead proposing cleanup goals based on the calculations for sediment background from nine samples. The proposed cleanup goal for barium will change from 10 parts per million (ppm) to 60 ppm, manganese from 97 ppm to 220 ppm, and vanadium from 5.4 ppm to 20 ppm. It appears that the PRPs were able to collect nine samples reasonably un-impacted by site activities and calculated the background numbers in accordance with current Part 201 guidance. Therefore, the DNRE does not object to changing these three COCs cleanup goals. The PRPs also note that the cleanup goal for arsenic was based on the Part 201 direct contact value of 6.6 ppm, which has now been revised to 7.6 ppm. Therefore, the PRPs propose to adjust this cleanup goal accordingly, and the DNRE has no

objection to this change. No other changes in ROD cleanup goals for sediments are proposed; so all other COCs will be remediated to the ROD-specified sediment goals.

Erodible Soils

Because soils designated as erodible may be deposited into the surface water and become sediment, the cleanup goals for erodible soils must be the same as for sediment cleanup goals. Therefore, the DNRE disapproves all proposed erodible soil cleanup goals that are not consistent with the sediment cleanup goals.

Non-Erodible Soils

The cleanup criteria for soils considered to be non-erodible are determined by the potential exposure routes that may exist. For this site, protection of drinking water (DW), protection of the groundwater to surface water interface (GSI), and protection from direct contact are exposure pathways that must be addressed. Part 201 allows for a demonstration of compliance with applicable soil criteria in several ways. One option is to submit soil sample analytical results that demonstrate that the COCs' concentrations are within pertinent, allowable criteria or cleanup goals. Part 201 further allows the PRPs to perform analyses on site samples to ascertain the actual leaching potential from site soils. If leached concentrations are shown to be within applicable criteria or cleanup goals, these data can be used as a substitute demonstration of compliance. Reliable institutional controls placed on the media can also be used to demonstrate compliance.

The PRPs performed soil analyses along transects at two vertical intervals along each transect. They stated in the report that the 10 non-erodible soil samples exhibiting the highest total metals levels were selected for testing by the Synthetic Precipitation Leaching Procedure (SPLP). This is an inaccurate representation of what was actually done. It appears instead, that six samples from the shallow sampling interval and four samples from the deeper interval were selected for SPLP analysis. One can argue the relative merits on why the specific six and four samples were chosen, but the DNRE can agree that an attempt was made to represent the highest concentrations. The PRPs then used the SPLP results to calculate new criteria for soils protective of the GSI and DW exposure pathways. Following are initial comments on the methods and proposals in the report:

- The data sets from the two sampling intervals should be evaluated independent of each other rather than combined as one 10-sample data set. The results from the surface samples and the deeper samples indicate that conditions differ between these two horizons. Different soil types must be evaluated separately.
- The SPLP results provided in the report are unacceptable for some metals because the method reporting limits (MRL) exceed the specific criteria for some or all of the samples for the following metals: aluminum, arsenic, cadmium, silver, and thallium. If the PRPs want to use SPLP data to demonstrate that soil removal is not necessary, the analyses will have to be redone for those samples where the MRL is too high.

- Page 8, Section 4.4.1 GSI Criteria: The report fails to explain what is meant regarding the issuance of a revised mixing zone determination serving as a basis for revising the cleanup goals for soils based on GSI criteria. The DNRE assumes this has just been incorrectly worded, but without seeing what is really meant, giving specific instruction or suggestions for correction is not possible.
- Pages 8-11: The PRPs have proposed two equations for calculating site-specific cleanup criteria utilizing the SPLP data. The assumptions used to generate these equations are invalid as presented and, therefore, not acceptable.

The soil sample metals results with their corresponding SPLP data do not correlate as assumed and, thus, the equations do not seem to be applicable for use at this site. Therefore, based on the observed lack of reliable correlation, the equations are not appropriate for use at the NBIA site, and the existing cleanup criteria will be those used historically for the site.

If the PRPs are still interested in using these equations, they will need to provide peer-reviewed articles describing their application from well-respected scientific publications that fully explain the equations, the assumptions used, and their appropriate applicability. However, the assumptions must still apply to the site data and various soil types.

Unless the PRPs can produce sufficient scientific justification in the form of accepted, peer-reviewed literature to persuade the DNRE otherwise, all of the proposed site-specific cleanup goals they have calculated in the report using these equations are not acceptable, and Part 201 or ROD criteria apply.

- The PRPs calculated the GSI criteria for antimony, manganese, mercury, selenium, and vanadium themselves. Whether or not any of these calculations are acceptable must ultimately be determined by the DNRE, Water Resources Division. Because the PRPs' calculation allowed for dilution for mercury, when dilution is not allowed, none of the recalculations of GSI criteria from the report were forwarded to that program for review.
- The validity of the equations contained in the report aside, valid SPLP data and its use in evaluating compliance with applicable criteria is made on a point by point basis; not by comparing cleanup criteria concentrations to the mean concentrations of the total metals and the SPLP results.

The following are metals-specific discussions related to the unacceptability of the approach discussed within the report. If a specific metal species presented in the report is not discussed below, reconsideration of that metal in subsequent reports is still required given the deficiencies in the PRPs' approach discussed above.

Aluminum: All sample results far exceed the Part 201 soil protective of DW criterion. For those samples analyzed for SPLP where the MRL was low enough to compare concentrations to applicable criteria, all samples were found to leach in excess of the Part 201 aesthetic criterion. The health-based criterion is exceeded in 7 of the 10 samples

where the SPLP was performed. Aluminum does not present a GSI concern and, therefore, must be managed to prevent DW exposures. An institutional control would be acceptable for managing this completed pathway.

Antimony: Analytical results do not exceed soil protective of DW or soil protective of GSI. The proposed cleanup goal for antimony in non-erodible soils should be protective.

Arsenic: The proposed use of 8,900 parts per billion (ppb) as a cleanup criteria for arsenic in non-erodible soil is unacceptable. The site is clearly impacted by arsenic so the proposal of using the site-wide background value calculated in the report is not valid. The MRL for the SPLP samples was 500 ppb which far exceeds the DW criterion. Therefore, it is impossible to determine whether arsenic in the site soils has the potential to leach above DW or GSI criteria. The PRPs must either rerun the SPLP with an MRL less than or equal to 10 ppb, or clean up impacted soil to the generic criteria protective of DW and GSI.

Barium: Barium does not appear to be a drinking water problem based on the data presented. However, the SPLP samples must be rerun using an MRL of no more than 1,300 ppb in order to determine whether the samples leach at concentrations greater than the GSI criterion.

Cadmium: The PRPs must repeat the SPLP using an MRL low enough to assess the leaching potential of cadmium to DW and/or GSI. Alternatively, they can propose another method of preventing exposure, perhaps using institutional controls for DW (assuming SPLP results are below GSI protection criteria).

Copper: The concentration of copper is at a concentration greater than the GSI limit of 32 ppb in the one SPLP sample where the MRL was low enough to quantify it. The other two SPLP samples that had MRLs greater than the GSI criterion must be reanalyzed to determine if copper is a GSI problem.

Lead: Concentrations of lead found in soil at the site meet the soils protective of DW criterion. The GSI limit is greater than the DW criterion. Therefore, the PRPs' proposed cleanup goal of 49,000 ppb for non-erodible soil is acceptable.

Mercury: The value calculated by the PRPs for the mixing zone determination is incorrect, as there is no dilution permitted for mercury. The PRPs must rerun the SPLP analyses using an MRL equivalent to low-level analysis for mercury and resubmit the results if they are interested in pursuing an alternate cleanup standard for mercury.

Nickel: The proposed soil cleanup goal for non-erodible soil is acceptable.

Silver: The concentration of silver in soil at the site exceeds the soils protective of DW criterion. The MRL for the SPLP analyses' results contained in the report is too high to assess whether the soil leaches in excess of the mixing zone based concentration. Rerun the SPLP with a lower MRL, or address the silver in some other manner. The report also does not indicate why silver was not analyzed during the groundwater sampling that was conducted.

Vanadium: The proposed cleanup goal is acceptable.

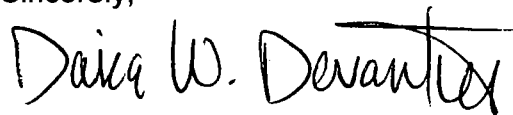
Zinc: The PRPs must rerun the SPLP achieving the required MRL in order to assess whether or not zinc can leach at concentrations greater than the mixing zone based limit.

It is clear that confusion exists on the part of the consulting firm preparing this document and the soil evaluation approach on behalf of the PRPs. The DNRE recommends scheduling a working session with all parties, after the United States Environmental Protection Agency has prepared its comments, so that our two agencies, the PRPs and its consultants can talk through some of these issues before another draft is submitted.

The DNRE has also concluded its review of the Groundwater Delineation Report, dated August 13, 2010. The Geologist for the site, Mr. Charles Graff, has prepared a review memo which is enclosed with this letter. Please contact Chuck at 517-335-2596 if you have any questions with respect to his review of that report.

Thank you for this opportunity to comment, and we do appreciate the additional time that was afforded for this review of these two important documents. As previously discussed, a new Project Manager has been assigned the NBIA Superfund Site due to the recent retirement of Ms. Deborah Larsen. Ms. Beth Mead-O'Brien has been assigned this site and is just now beginning the process of familiarizing herself with this complex site. Please contact her at 517-335-3098 as you move forward on these technical issues involving this site.

Sincerely,



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Enclosure

cc: Mr. John Bradley, DNRE
Ms. Beth Mead-O'Brien, DNRE
Mr. Charles Graff, DNRE